# 4. NEEDS ANALYSIS

This chapter reviews the relationship between bicycle use, commute patterns, demographics, and land use in the City of Fremont. It identifies major activity centers and public facilities where bicyclists may be destined, along with the needs of recreational and commuter bicyclists. A review of the needs of each bicycle user group will help guide the type and routing of the bikeway system.

One of the primary reasons for creating the Bicycle Master Plan is to maximize the number of bicycle commuters in order to help achieve transportation goals such as minimizing traffic congestion and air pollution. In order to set the framework for these benefits, local and national statistics are used as a basis for determining the benefits of an improved and expanded bikeway network for Fremont. The national and local statistics are based on the 2000 U.S. Census.

## 4.1. LAND USE AND DEMAND

The concept of "demand" for bicycle facilities can be difficult to comprehend. Unlike automobile use, where historical trip generation studies and traffic counts for different types of land uses permits an estimate of future "demand" for travel, bicycle trip generation methods are less advanced and standardized in the United States. Land use patterns can help predict demand and are important to bikeway planning because changes in land use (and particularly employment areas) will affect average commute distance, which in turn affects the attractiveness of bicycling as a commute mode. The Fremont bikeway network will connect the neighborhoods where people live to the places they work, shop, recreate, or go to school. An emphasis will be placed on regional bikeway and transit connections centered around the major activity centers in Fremont, including:

- Major employment centers
- Civic buildings such as libraries
- Schools
- District centers
- Fremont BART station
- Centerville Amtrak/ACE Train Station
- Neighborhood parks and regional recreational areas

## 4.2. COMMUTE PATTERNS

A central focus of presenting commute information is to identify the current "mode split" of people that live and work in Fremont. Mode split refers to the choice of transportation a person selects to move to destinations, be it walking, bicycling,

taking a bus, or driving. One major objective of any bicycle facility improvement is to increase the "split" or percentage of people who choose to bike rather than drive or be driven. Every saved vehicle trip or vehicle mile represents quantifiable reductions in air pollution and can help in lessening traffic congestion.

Journey to work and travel time to work data were obtained from the 2000 US Census for Fremont, Alameda County, California, and the United States. Journey to work data are shown in **Table 4-1**.

**Table 4-1**
**Journey to Work Data**

| Mode | United States | California | Alameda County | Fremont |
|---|---|---|---|---|
| Bicycle | 0.4% | 0.8% | 1.2% | 0.6% |
| Drove Alone | 75.7% | 71.8% | 66.4% | 77.4% |
| Carpool | 12.2% | 14.6% | 13.8% | 12.4% |
| Public Transit | 4.7% | 5.1% | 10.6% | 5.0% |
| Walked | 2.9% | 2.9% | 3.2% | 1.1% |
| Other | 4.1% | 4.8% | 2.5% | 1.4% |

*Source: U.S. Census 2000*

As shown, about 0.6% of all employed Fremont residents commute primarily by bicycle, which is very similar to the national average of 0.4%, the state average of .8% and about half of the Alameda County average. This figure indicates that Fremont has an average mode split for commuting purposes. It should be noted that the Census data do not give an indication of the number of people who bicycle for recreation or for utilitarian purposes, such as shopping.

Travel time to work is shown in **Table 4-2**. Travel time is important because it can give an indication of the number of potential new bicycle commuters.

It has been suggested that a reasonable commute time, regardless of mode, is about 30 minutes. Assuming that travel occurs primarily on local roads during peak commute periods, a motor vehicle commute time of 15 minutes or less would be equivalent to about a 30 minute bicycle commute on flat terrain. In other words, converting an under-15 minute motor vehicle commute trip to a bicycle commute trips would still result in a reasonable 30 minute commute time. As shown in Table 4-2, about 20% of Fremont residents have a commute time of 15 minutes or less (most of these trips are drive alone, based on the city's mode split data). While some of these people may be taking transit or walking, based on the fact that 77% of all Fremont residents drive alone to work, it can be assumed that the majority of these short-distance commuters are driving alone to work. Given these data, there is a substantial opportunity to capture some of the short distance (less than 15 minute) motor vehicle commute trips and convert them to bicycle commute trips.

**Table 4-2**
**Travel Time to Work Data**

| | United States | California | Alameda County | Fremont |
|---|---|---|---|---|
| Less than 15 minutes | 29.4% | 25.3% | 21% | 20% |
| 15 to 29 minutes | 36.1% | 35.4% | 32% | 28% |
| 30 to 44 minutes | 19.1% | 20.9% | 22% | 25% |
| 45 to 59 minutes | 7.4% | 8.2% | 11% | 14% |
| 60 minutes or more | 8.0% | 10.1% | 14% | 13% |

*Source: Census 2000*

## 4.3. TRIP REDUCTION AND POTENTIAL AIR QUALITY BENEFITS

Based on available census data on mode split, a rough projection of future bicycle ridership in Fremont along with the trip reduction and air quality benefits can be made. While these projections are only ambitious estimates, they are important to building a case for investing in bicycle facilities and programs over time. For example, a traffic model is used to project future roadway improvements over time based on a straight-line assumption about auto use, fuel price, and other factors. The projection on bicycle use and benefits differs only in that it forecasts a minor change in modal choice – not travel behavior – based on a combination of empirical and theoretical data. Research conducted throughout the U.S. by the U.S. Department of Transportation shows a definitive link between bicycle use and (a) age and (b) the miles of bicycle facilities provided. It is possible to derive a causal relationship from this information.

Fremont lies within the San Francisco Bay Area Basin which is regulated by the Bay Area Air Quality Management District (BAAQMD). The city is within the South Central Bay District of the Basin. According to the California Air Resources Board, the air quality in the San Francisco Bay Area Basin exceeds the Federal health-based standards for ground-level ozone 35 to 40 days per year, and exceeds the more stringent California standards for ozone more than 100 days per year. The Basin exceeds the Federal standards for airborne particles (PM10) less than five times annually, and exceeds the more stringent California standards for PM10 an average of 90 to 100 days per year. Currently, the Basin is classified as non-attainment for the Federal ground-level ozone and PM10 standards. The Basin is classified as severe non-attainment for the California ozone standard and non-attainment for the California PM10 standard.

According to the BAAQMD, motor vehicles are responsible for approximately 75 percent of the smog in the Bay Area. Reducing vehicle miles traveled (VMTs) is a key goal of the BAAQMD, and fully implementing Fremont's bicycle network will help achieve this goal by providing residents safe and functional ways to get to work, school, or shopping without using a motor vehicles. The current number of daily bicycle commuters in Fremont is estimated to be 3,149 riders, making a total of 6,298 daily trips and saving an estimated 14,823 VMTs per weekday. With implementation of the Bicycle Master Plan network and programs by 2020, it is

estimated that bicycle commuting could increase to 8,777 daily bicycle riders making 17,554 daily trips and saving an approximately 41,313 VMTs per weekday.

**Table 4-3** quantifies the estimated reduction in VMTs in Fremont following implementation of the bicycle network, and the estimated reduction in air pollutants based on the best available local and national data. Under these estimates, the proposed bikeway system in Fremont would increase the bicycle mode share of trips from 0.55 percent in 2000 (U.S. Census) to over 1.53 percent by 2020. This would result in an estimated decrease of 760 lbs/day of PM10, 2,999 lbs/day of ROG, and 2,060 lbs/day of NOX.

## 4.4. BICYCLE SAFETY AND ACCIDENT ANALYSIS

### 4.4.1. Perceptions of Safety

Safety is a major concern of both existing and potential bicyclists. For those who ride, safety is typically an on-going concern or even a distraction. For those who don't ride, it is one of the most compelling reasons not to ride. In discussing bicycle safety, it is important to separate out perceived dangers versus actual safety hazards.

Bicycle riding on-street is commonly perceived as unsafe because of the exposure of a lightweight, two-wheeled vehicle to heavier and faster moving automobiles, trucks and buses. Actual collision statistics, however, show that bicyclists face only a marginally higher degree of sustaining an injury than a motorist based on numbers of users and miles traveled. Death rates are essentially the same with bicyclists as with motorists. Bicycle-vehicle collisions are much less likely to happen than bicycle-bicycle, bicycle-pedestrian, or collisions caused by physical conditions. The majority of reported bicycle collisions show the bicyclist to be at fault; (due to not obeying basic traffic laws; these often involve younger bicyclists riding on the wrong side of the road or being hit broadside by a vehicle at an intersection or driveway.)

### 4.4.2. Collision Data

Data for reported bicycle collisions were collected for the calendar years 2000 to 2003 in Fremont, and are presented in **Table 4-4**.

**Table 4-3**
**Bicycle Commute and Air Quality Projections**

| **Current Commuting Statistics** | | **Source** |
|---|---|---|
| Fremont Population | 203,413 | *2000 US Census* |
| Number of Employed Persons | 100,215 | *2000 US Census* |
| Number of Bicycle-to-Work Commuters | 556 | *2000 US Census* |
| Bicycle-to-Work Mode Share | 0.6% | *Calculated from above* |
| School Children Grades K-8 | 26,876 | *2000 US Census, population ages 6-14* |
| Estimated School Bicycle Commuters | 672 | *Calculated based on existing estimates of biking to school* |
| Number of College Students | 15,476 | *2000 US Census* |
| Estimated College Bicycle Commuters | 309 | *2000 US Census* |
| Average Weekday BART Ridership | 5,867 | *BART, boardings at BART station* |
| Number of Daily Bike-BART Users | 39 | *Estimate based on California TOD database Fremont BART access* |
| Utilitarian Bicycle Trips | 1,573 | *Calculated from above on existing estimates* |
| **Existing Bicycle Commuters** | | |
| Total Number of Bicycle Commuters | 3,149 | *Total of bike-to-work, transit, school, college and utilitarian bicycle trips. Does not include recreation.* |
| Total Daily Bicycle Trips | 6,298 | *Total bicycle commuters x 2 (for round trips)* |
| Reduced Vehicle Trips per Weekday | 4,329 | *Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children* |
| Reduced Vehicle Miles per Weekday | 14,823 | *Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren* |
| **Future Bicycle Commuters** | | |
| Number of Future Daily Bicycle Commuters | 8,777 | *Estimated using increase to 279% of baseline from 2000 Los Angeles County MTA study* |
| Future Bicycle-to-Work Mode Share | 1.53% | *Calculated from above* |
| Future Total Daily Bicycle Trips | 17,554 | *Calculated from above* |
| Future Reduced Vehicle Trips per Weekday | 12,065 | *Calculated from above* |
| Future Reduced Vehicle Miles per Weekday | 41,313 | *Calculated from above* |
| Future Reduced Vehicle Miles per Year | 1,116,547 | *180 days for students, and 256 days for employed persons* |
| **Future Air Quality Benefits** | | |
| Reduced PM10* (tons/weekday) | 760 | *(.0184 tons per reduced mile)* |
| Reduced NOX* (tons/weekday) | 2,060 | *(.04988 tons per reduced mile)* |
| Reduced ROG* (tons/weekday) | 2,999 | *(.0726 tons per reduced mile)* |
| Reduced PM10 (tons/year) | 20,544 | *(.0184 tons per reduced mile)* |
| Reduced NOX (tons/year) | 55,693 | *(.04988 tons per reduced mile)* |
| Reduced ROG (tons/year) | 81,061 | *(.0726 tons per reduced mile)* |

*Sources as noted in the table.*
**PM10 = particulate matter, NOX = nitrogen oxides, ROG = reactive organic gases.*

**Table 4-4**
**Summary of Reported Bicycle Collisions in Fremont, 2000-2004**

| Street 1 | Street 2 | Primary Collision Factor | Party at Fault | Year |
|---|---|---|---|---|
| Central Avenue | Farwell Drive | Wrong Side | Bicycle | 2000 |
| Central Avenue | Logan Drive | Wrong Side | Bicycle | 2000 |
| Chiltern Drive | Driscoll Road | Other Hazard | Bicycle | 2000 |
| Commerce Drive | Mimosa Terrace | Wrong Side | Bicycle | 2000 |
| Crandalwood Drive | Deep Creek Road | N/A | Bicycle | 2000 |
| Davis | Margery Drive | Stop Sign/Signal | Bicycle | 2000 |
| Davis | Stevenson Boulevard | Right of Way Automobile | Bicycle | 2000 |
| Deep Creek Road | Paseo Padre Parkway | Wrong Side | Bicycle | 2000 |
| Dondero Way | Route 84 | Pedestrian Violation | Bicycle | 2000 |
| Dow Court | Pickering Avenue | Wrong Side | Bicycle | 2000 |
| Eggers Drive | Fremont Boulevard | Right of Way Auto | Bicycle | 2000 |
| Ends | Coit Avenue | Impromptu Turn | Bicycle | 2000 |
| Fortner | Lippert Avenue | Wrong Side | Bicycle | 2000 |
| Fremont Boulevard | Bidwell Drive | Impromptu Turn | Driver | 2000 |
| Fremont Boulevard | Blacow Road | Driver under the influence of alcohol and drugs | Bicycle | 2000 |
| Fremont Boulevard | Central Avenue | Right of Way Auto | Driver | 2000 |
| Fremont Boulevard | Cusing Parkway | Impromptu Turn | Driver | 2000 |
| Fremont Boulevard | Decoto Road | Right of Way Auto | Bicycle | 2000 |
| Fremont Boulevard | Decoto Road | N/A | Bicycle | 2000 |
| Fremont Boulevard | Margery Drive | N/A | N/A | 2000 |
| Fremont Boulevard | Montrose Avenue | Wrong Side | N/A | 2000 |
| Fremont Boulevard | Mowry Avenue | Wrong Side | Bicycle | 2000 |
| Fremont Boulevard | Mowry Avenue | Wrong Side | Bicycle | 2000 |
| Fremont Boulevard | Nicolet Drive | Wrong Side | N/A | 2000 |
| Fremont Boulevard | Stevenson Boulevard | Wrong Side | Bicycle | 2000 |
| Fremont Boulevard | Thornton Avenue | Wrong Side | Bicycle | 2000 |
| Fremont Boulevard | Walnut Avenue | Wrong Side | Bicycle | 2000 |
| Grimmer Boulevard | Auto mall Parkway | Wrong Side | Bicycle | 2000 |

| Street 1 | Street 2 | Primary Collision Factor | Party at Fault | Year |
|---|---|---|---|---|
| Grimmer Boulevard | Auto Mall Parkway Driveway | Lights | Bicycle | 2000 |
| Grimmer Boulevard | Auto Mall Parkway | Not Driver | N/A | 2000 |
| Grimmer Boulevard | Bay | N/A | N/A | 2000 |
| Grimmer Boulevard | Bay | Right of Way Auto | Driver | 2000 |
| Grimmer Boulevard | Blacow Road | Unsafe Speed | Bicycle | 2000 |
| Grimmer Boulevard | Davis | Wrong Side | Bicycle | 2000 |
| Grimmer Boulevard | Irvington Boulevard | Other Hazard | Driver | 2000 |
| Hardwood | Applewood | Right of Way Auto | Bicycle | 2000 |
| Isherwood Drive | Paseo Padre Parkway | Impromptu turn | Bicycle | 2000 |
| Lake Head Drive | Lake Ontario Drive | Other hazard | Bicycle | 2000 |
| Leslie | Bidwell Drive | Right of Way Auto | Bicycle | 2000 |
| Linda Drive | Niles Boulevard | Other Hazard | N/A | 2000 |
| Logan Driver | Eggers Drive | Other Hazard | Bicycle | 2000 |
| Mowry Road | Lark Avenue | Unsafe Speed | Bicycle | 2000 |
| Mission View Drive | Leslie | Other Hazard | Drive | 2000 |
| Montevideo Court | Montevideo Circle | Other Hazard | Bicycle | 2000 |
| Mowry Avenue | Parkside Drive | Right of Way Auto | Driver | 2000 |
| Mowry Avenue | Route 880 Northbound on the off-ramp | Right of Way Auto | Driver | 2000 |
| Mowry Avenue | Route 880 Northbound on the off-ramp | Stop Sign/Signal | N/A | 2000 |
| Mowry Avenue | State | Wrong Side | Bicycle | 2000 |
| Mowry Avenue | Waterside Circle | Wrong Side | Bicycle | 2000 |
| Parkhurst Drive | Walnut Avenue | Wrong Side | Bicycle | 2000 |
| Paseo Padre Parkway | Capitol | Improper Driving | Bicycle | 2000 |
| Paseo Padre Parkway | Fitzgerald | Wrong Side | Bicycle | 2000 |
| Paseo Padre Parkway | Route 84 | Stop Sign/Signal | Bicycle | 2000 |
| Paseo Padre Parkway | Parkmont Drive | Right of Way Auto | Bicycle | 2000 |
| Pawnee Drive | Grimmer Boulevard | N/A | Bicycle | 2000 |
| Peralta Boulevard | Cambridge Court | Wrong Side | Bicycle | 2000 |
| Peralata Boulevard | Redwood Terrace | Improper Passing | Driver | 2000 |
| Robin | Blacow Road | Right of Way Auto | Driver | 2000 |
| RT 880 NB | Mowry Avenue | Wrong Side | Bicycle | 2000 |

| Street 1 | Street 2 | Primary Collision Factor | Party at Fault | Year |
|---|---|---|---|---|
| offramp | | | | |
| Starr | Mission Boulevard | Right of Way Auto | Driver | 2000 |
| Stevenson Boulevard | Blacow Road | Wrong Side | Bicycle | 2000 |
| Stevenson Boulevard | Route 880 NB off-ramp | Wrong Side | Bicycle | 2000 |
| Stevenson Boulevard | Sundale Drive | Wrong Side | Bicycle | 2000 |
| Thornton Avenue | Dusterberry Way | Other Hazard | Driver | 2000 |
| Walnut Avenue | Cherry Lane | Driver under the influence of drugs and alcohol | Bicycle | 2000 |
| Walnut Avenue | Lakefront Court | Other Hazard | Bicycle | 2000 |
| Warm Springs Boulevard | Mayten Way | Wrong Side | Bicycle | 2000 |
| Washington Boulevard | Roberts Avenue | Driver under the influence of drugs and alcohol | Bicycle | 2000 |
| Wyndham Drive | Faraday Court | Unsafe speed | Bicycle | 2000 |
| Andante | Butano Park Drive | Unsafe speed | Bicycle | 2001 |
| Auto Mall Parkway | Boyce Road | Wrong Side | Bicycle | 2001 |
| Auto Mall Parkway | Route 880 B Off/R | Lane Change | Driver | 2001 |
| Blackstone Drive | Gordon Place | Wrong Side | Bicycle | 2001 |
| Blacow Road | Grimmer Boulevard | Right of Way Auto | Driver | 2001 |
| Blacow Road | Mattos Court | Wrong Side | Bicycle | 2001 |
| Blacow Road | Roselle CM | Wrong Side | Bicycle | 2001 |
| Blacow Road | Thornton Avenue | Stop Sign/Signal | Bicycle | 2001 |
| Capitol Avenue | State | Wrong Side | Bicycle | 2001 |
| Capitol Avenue | State | Unsafe Speed | Bicycle | 2001 |
| Carol Avenue | Chapel Way | N/A | N/A | 2001 |
| Chapel Way | Fremont Boulevard | Wrong Side | Bicycle | 2001 |
| Coronado Drive | Escala Terrace | Wrong Side | Bicycle | 2001 |
| Davenport | Grimmer | Right of Way | Bicycle | 2001 |
| Decoto Road | Fremont Boulevard | Stop Sign/Signal | Bicycle | 2001 |
| Deep Creek Road | Frederick Lane | Stop Sign/Signal | Bicycle | 2001 |
| Driscoll Road | Harrington | Wrong Side | Bicycle | 2001 |
| Eggers Drive | Corrigan | Right of Way Auto | Driver | 2001 |
| Eggers Drive | Paseo Padre Parkway | Improper Passing | Bicycle | 2001 |
| Enterprise | Grimmer Boulevard | Lights | Bicycle | 2001 |
| Fremont Boulevard | Bidwell Drive | Wrong Side | Bicycle | 2001 |
| Fremont Boulevard | Clough Avenue | Wrong Side | Bicycle | 2001 |
| Fremont Boulevard | Landing Parkway | Unsafe Speed | Bicycle | 2001 ` |

| Street 1 | Street 2 | Primary Collision Factor | Party at Fault | Year |
|---|---|---|---|---|
| Fremont Boulevard | Peralta | Unsafe Speed | Bicycle | 2001 |
| Fremont Boulevard | Peralta | Wrong Side | Bicycle | 2001 |
| Fremont Boulevard | Peralta | Wrong Side | Bicycle | 2001 |
| Fremont Boulevard | Stevenson Boulevard | N/A | Driver | 2001 |
| Fremont Boulevard | Walnut Avenue | Wrong Side | Bicycle | 2001 |
| Grimmer Boulevard | Blacow Road | Wrong Side | Bicycle | 2001 |
| Hancock Drive | Wolcott Drive | Stop Sign/Signal | Bicycle | 2001 |
| Harrisburg Avenue | Conovan Lane | N/A | N/A | 2001 |
| Liberty | Stevenson Boulevard | Wrong Side | N/A | 2001 |
| Martha Avenue | Paseo Parkway | Right of Way Auto | Bicycle | 2001 |
| Mission Boulevard | Mowry Avenue | Improper Passing | Driver | 2001 |
| Mission Boulevard | Niles Canyon | Improper Turn | Bicycle | 2001 |
| Mission Boulevard | Williams Court | Unsafe Speed | Driver | 2001 |
| Morrison Canyon Road | Mission Boulevard | Unsafe Speed | Bicycle | 2001 |
| Mowry Avenue | Fremont Boulevard | Wrong Side | Bicycle | 2001 |
| Mowry Avenue | Fremont Boulevard | Starting/Backing up | Driver | 2001 |
| Mowry Avenue | Paseo Padre Parkway | Right of Way Auto | Driver | 2001 |
| Mowry Avenue | I-880 NBOFF/R | Wrong Side | Bicycle | 2001 |
| Mowry Avenue | I-880 NBOFF/R | Wrong Side | Bicycle | 2001 |
| Osgood Road | Grimmer | Impromptu Turn | Bicycle | 2001 |
| Osgood | Seldon Court | Other hazard | Driver | 2001 |
| Paseo Padre Parkway | Peralta Boulevard | Stop Sign/Signal | Bicycle | 2001 |
| Paseo Padre Parkway | Riverwalk Drive | Wrong Side | Bicycle | 2001 |
| Paseo Padre Parkway | Stevenson Boulevard | Wrong Side | Bicycle | 2001 |
| Paseo Padre Parkway | Thornton Avenue | Other Side | Bicycle | 2001 |
| Peralta Boulevard | Shinn | Wrong Side | Bicycle | 2001 |
| I-880 | Auto Mall Parkway | Other Hazards | Bicycle | 2001 |
| I-880 | Stevenson Boulevard | Other Hazards | Driver | 2001 |
| Stevenson Boulevard | Besco Drive | Right of Way Auto | Driver | 2001 |
| Stevenson Boulevard | Besco Drive | N/A | N/A | 2001 |
| Stevenson Boulevard | Lindsay McDermott | Wrong Side | Bicycle | 2001 |
| Stevenson | Stevenson | Wrong Side | Bicycle | 2001 |

| Street 1 | Street 2 | Primary Collision Factor | Party at Fault | Year |
|---|---|---|---|---|
| Boulevard | Common | | | |
| Stonebridge Drive | Terrace Drive | Right of Way Auto | Bicycle | 2001 |
| Warm Springs Boulevard | Tonopah Drive | Right of Way | Driver | 2001 |
| Fremont Boulevard | Peralta Boulevard | Wrong Side of Road | Bicycle | 2002 |
| Blacow Road | Royal Palm Drive | Auto Right of Way Violation | Driver | 2002 |
| Blacow Road | Omar Street | Traffic Signals and Signs | Driver | 2002 |
| Peralta Boulevard | Parish Avenue | Wrong Side of Road | Bicycle | 2002 |
| Stevenson Boulevard | Davis Street | Other Hazardous Movement | Bicycle | 2002 |
| Grimmer Boulevard | High Street | Auto Right of Way Violation | Bicycle | 2002 |
| Grand Lake Drive | Lake Barlee Lane | Improper Turning | Bicycle | 2002 |
| Beard Road | Milton Street | Other Hazardous Movement | Bicycle | 2002 |
| Fremont Boulevard | Doane Street | Auto Right of Way Violation | Bicycle | 2002 |
| Driscoll Road | Chiltern Drive | Wrong Side of Road | Bicycle | 2002 |
| Martha Avenue | Paseo Padre Parkway | Auto Right of Way Violation | Driver | 2002 |
| Bay Street | Grimmer Boulevard | Wrong Side of Road | Bicycle | 2002 |
| Stevenson Boulevard | Besco Drive | Pedestrian Right of Way Violation | Pedestrian | 2002 |
| Stevenson Boulevard | Civic Center Drive | Wrong Side of Road | Bicycle | 2002 |
| High Street | Grimmer Boulevard | Wrong Side of Road | Bicycle | 2002 |
| Warm Springs Boulevard | Warren Avenue | Pedestrian Violation | Bicycle | 2002 |
| Eugene Street | Citrus Drive | Wrong Side of Road | Bicycle | 2002 |
| Fremont Boulevard | Peralta Boulevard | Wrong Side of Road | Bicycle | 2002 |
| Fremont Boulevard | Mowry Avenue | Wrong Side of Road | Bicycle | 2002 |
| Fremont Boulevard | Stevenson Boulevard | Wrong Side of Road | Bicycle | 2002 |
| Stevenson Boulevard | Fremont Boulevard | Wrong Side of Road | Bicycle | 2002 |
| Gallaudet Drive | Stevenson Boulevard | Auto Right of Way | Bicycle | 2002 |
| Central Avenue | Centralmont Place | Unsafe Speed | Bicycle | 2002 |
| Peralta Boulevard | Maple Street | Wrong Side of Road | Bicycle | 2002 |
| Newport Drive | Independence Road | Auto Right of Way Violation | Bicycle | 2002 |
| Paseo Padre | Eggers Drive | Wrong Side of | Bicycle | 2002 |

| Street 1 | Street 2 | Primary Collision Factor | Party at Fault | Year |
|---|---|---|---|---|
| Parkway | | Road | | |
| Mowry Avenue | Blacow Road | Improper Turning | Driver | 2002 |
| Decolo Road | Fremont Boulevard | Wrong Side of Road | Bicycle | 2002 |
| Paseo Padre Parkway | Mowry Avenue | Driving Under Influence | Bicycle | 2002 |
| Liberty Street | Beacon Avenue | Auto Right of Way Violation | Driver | 2002 |
| Fremont Boulevard | Walnut Avenue | Unsafe Speed | Bicycle | 2002 |
| Niles Boulevard | Linda Drive | Improper Passing | Driver | 2002 |
| Gallegos Avenue | Washington Common | Auto R/W violation | Driver | 2002 |
| Blanchard Street | Bullard Street | Other Hazardous Movement | Bicycle | 2002 |
| Mowry Avenue | Fremont Boulevard | Traffic Signals and Signs | Bicycle | 2002 |
| Stevenson Boulevard | Blacow Road | Traffic Signals and Signs | Bicycle | 2002 |
| Fremont Boulevard | I-880 North | Wrong Side of Road | Bicycle | 2002 |
| Mission Boulevard | Warm Springs Boulevard | Ped R/W Violation | Pedestrian | 2002 |
| Fremont Boulevard | Staneley Avenue | Wrong Side of Road | Bicycle | 2002 |
| Eggers Drive | Logan Drive | Traffic Signals and Signs | Bicycle | 2002 |
| Decoto Road | Brookmill Drive | Improper Turning | Bicycle | 2002 |
| Rancho Arroyo Parkway | Riviera Drive | Auto R/W Violation | Bicycle | 2002 |
| Grimmer Boulevard | Bay Street | Wrong Side of Road | Bicycle | 2002 |
| Arden Common | Paseo Padre Parkway | Wrong Side of Road | Bicycle | 2002 |
| Fremont Boulevard | Power Pole 3226 | Wrong Side of Road | Bicycle | 2002 |
| Mission Boulevard | Rancho Arroyo Parkway | Unsafe Lane Change | Driver | 2002 |
| Warm Springs Boulevard | Pontiac Way | Auto Right of Way Violation | Driver | 2002 |
| Panton Terrace | Sequoia Terrace | Other Improper Driving | Driver | 2002 |
| Fremont Boulevard | Chapel Way | Other hazardous movement | Bicycle | 2002 |
| Central Avenue | Dusterberry Way | Improper Turning | Bicycle | 2002 |
| Fremont Boulevard | Mattos Drive | Other Hazardous Movement | Bicycle | 2002 |
| Paseo Padre Parkway | Sylvester Drive | Auto Right of Way Violation | Bicycle | 2002 |
| Mowry Avenue | Farwell Drive | Wrong Side of Road | Bicycle | 2002 |
| Davis Street | Ogden Drive | Wrong Side of Road | Bicycle | 2002 |
| Davis Street | Stevenson | Unsafe Starting or | Bicycle | 2002 |

| Street 1 | Street 2 | Primary Collision Factor | Party at Fault | Year |
|---|---|---|---|---|
| | Boulevard | Backing | | |
| Fremont Boulevard | Country Drive | Wrong Side of Road | Bicycle | 2002 |
| Margery Drive | Davis Street | Auto R/W Violation | Bicycle | 2002 |
| Paseo Padre Parkway | Walnut Avenue | Other Hazardous Movement | Bicycle | 2003 |
| Stevenson Boulevard | Blacow Road | Auto R/W Violation | Bicycle | 2003 |
| Margery Drive | Blewett Street | Unsafe Speed | Bicycle | 2003 |
| Fremont Boulevard | I-880 | Wrong Side of Road | Bicycle | 2003 |
| Fremont Boulevard | Blacow Road | Improper Turning | Bicycle | 2003 |
| Fremont Boulevard | Stevenson Boulevard | Auto R/W Violation | Bicycle | 2003 |
| Mowry Avenue | Fremont Boulevard | Traffic Signals and Signs | Bicycle | 2003 |
| Fremont Boulevard | Nicolet Avenue | Auto R/W | Bicycle | 2003 |
| Dolerita Avenue | Las Palmas Avenue | Wrong Side of Road | Bicycle | 2003 |
| Farwell Drive | Eggers Drive | Other Hazardous Movement | Bicycle | 2003 |
| Boone Drive | Blacow Road | Unsafe Starting or Backing | Bicycle | 2003 |
| Mowry Avenue | Argonaut Way | Wrong Side of Road | Bicycle | 2003 |
| I-680 | Mission Boulevard | Auto Right of Way Violation | Driver | 2003 |
| Rt. 238 | Orchard Drive | Wrong Side of Road | Bicycle | 2003 |
| Eggers Drive | Glenview Drive | Unsafe Speed | Bicycle | 2003 |
| Mowry Avenue | Lexington Street | Auto R/W Violation | Bicycle | 2003 |
| Cabrillo Drive | Diaz Drive | Traffic Signals and Sign | Bicycle | 2003 |
| Auto Mall Parkway | I-880 | Auto R/W violation | Driver | 2003 |
| Roberts Avenue | Washington Boulevard | Wrong Side of Road | Bicycle | 2003 |
| Paseo Padre Parkway | Isherwood Way | Unsafe Lane Change | Bicycle | 2003 |
| Fremont Boulevard | Eggers Drive | Wrong side of road | Bicycle | 2003 |
| Logan Drive | Central Avenue | Traffic Signals | Bicycle | 2003 |
| Fremont Boulevard | Thornton Avenue | Auto Right of Way Violation | Bicycle | 2003 |
| Fremont Boulevard | Mowry Avenue | Wrong Side of Road | Bicycle | 2003 |
| Paseo Padre Parkway | Country Drive | Wrong Side of Road | Bicycle | 2003 |
| Stevenson Boulevard | Farwell Drive | Auto Right of Way Violation | Bicycle | 2003 |

| Street 1 | Street 2 | Primary Collision Factor | Party at Fault | Year |
|---|---|---|---|---|
| Blacow Road | Sherwood Street | Wrong Side of Road | Bicycle | 2003 |
| Delaware Street | Charleston Way | Auto Right of Way Violation | Bicycle | 2003 |
| McDuff Avenue | Masters Court | Auto Right of Way Violation | Bicycle | 2003 |
| Fremont Boulevard | Chapel Way | Wrong Side of Road | Bicycle | 2003 |
| Paseo Padre Parkway | Kaiser Drive | Other | Bicycle | 2003 |
| Warm Springs Boulevard | Warren Avenue | Auto Right of Way Violation | Bicycle | 2003 |
| Alvardo Boullevard | Lowry Road | Pedestrian Violation | Pedestrian | 2003 |
| County Road | Paseo Padre Parkway | Wrong Side of Road | Bicycle | 2003 |
| Argonaut Way | Parkhurst Drive | Wrong Side of Road | Bicycle | 2003 |
| Chapel Way | Fremont Boulevard | Wrong Side of Road | Bicycle | 2003 |
| Mowry Avenue | Fremont Boulevard | Wrong Side of Road | Bicycle | 2003 |
| Paseo Padre Parkway | Grimmer Boulevard | Traffic Signals and Signs | Bicycle | 2003 |
| Camden Street | Eggers Drive | Wrong Side of Road | Bicycle | 2003 |
| Fremont Boulevard | Crestwood Street | Wrong Side of Road | Bicycle | 2003 |
| Fremont Boulevard | Sundale Drive | Wrong Side of Road | Bicycle | 2003 |

*Source: City of Fremont, August 2004*

As shown, there were 245 bicycle-related collisions reported in Fremont from 2000 to 2003. The collision locations are spread throughout Fremont, although certain locations recorded higher than average accident rates. Of the motor vehicle versus pedestrian collisions in Fremont between 2000 and 2003, twenty percent (20%) occurred along Fremont Boulevard. Accidents involving bicycles were also concentrated along Mowry (10%), Paseo Padre (8%) and Grimmer (7%). The 2000-2003 accidents were caused by numerous factors, although thirty six percent (36%) were attributable to bicyclists riding the wrong direction on the street.

The Fremont Police Department enforces all traffic laws, for bicycles and motor vehicles as part of their regular duties. Violations may include bicyclists who break traffic laws, as well as motorists who disobey traffic laws and make the cycling environment more dangerous. The level of enforcement depends on the availability of officers. The Police Department also responds to particular needs and problems as they arise. In addition, an important function of the police department is filing reports for accidents involving bicyclists. The Police Department should continue to keep a record, accessible to Transportation Engineering, on where, when and how collisions between bicyclists and cars and bicyclists and pedestrians occur. For the City's bicycle planning effort, Transportation Engineering should continue to

review and monitor bicycle and pedestrian accident data to improve safety through the bicycle network.

## 4.5. BICYCLIST NEEDS

The purpose of reviewing the needs of bicyclists is twofold: (a) it is instrumental when planning a system that must serve both commuter and recreational user groups; and (b) it is useful when attempting to quantify future usage and benefits to justify expenditures of resources. According to a nationwide 1991 Lou Harris Poll, it was reported that "...nearly 3 million adults (about one in 60) already commute by bike, and projected the number could rise to 35 million if more bicycle friendly transportation systems existed." In short, there is a large reservoir of potential bicyclists who do not ride (or ride more often) simply because they do not feel comfortable using the existing street system and/or don't have appropriate bicycle facilities at their destination.

Key general observations about bicycling needs in Fremont include:

- Bicyclists are typically categorized as experienced or casual riders. The U.S. Department of Transportation identifies thresholds of traffic volumes, speeds, and curb lanes where less experienced bicyclists begin to feel uncomfortable. For example, on an arterial with traffic moving between 30 and 40 miles per hour, less experienced bicyclists prefer bike lanes while more experienced bicyclists can comfortably use streets with wide curb lanes.
- Casual riders include those who feel less comfortable negotiating traffic. Others such as children and the elderly may have difficulty gauging traffic, responding to changing conditions, or moving rapidly enough to clear intersections.
- Casual riders may perceive riding on sidewalks as being a safer alternative than bicycling on-street on major roads, when in fact sidewalk riding is inherently more dangerous due to the fact that most motorists aren't expecting a bicyclist to emerge from the sidewalk at the many driveways and intersections along a sidewalk segment. Wrong-way sidewalk riding is of particular concern.
- Other attributes of the casual bicyclist include cycling shorter distances than the experienced rider and unfamiliarity with many of the rules of the road.
- The casual bicyclist will benefit from route markers, bike lanes, wider curb lanes, and educational programs. Casual bicyclists may also benefit from marked routes that lead to parks, schools, shopping areas, and other destinations.
- Experienced bicyclists include those who prefer the most direct, through route between origin and destination, and a preference for riding within or near the travel lanes. Experienced bicyclists negotiate streets in much the same manner as motor vehicles, merging across traffic to make left turns, and avoiding bike lanes and shoulders that contain gravel and glass. The experienced bicyclist will benefit from wider curb lanes (so that vehicles do

not have to change lanes to pass) and loop detectors at signals. The experienced bicyclist who is primarily interested in exercise will benefit from loop routes that lead back to the point of origin.

- Bicycles themselves range in cost from about $200 to over $2,000 for adult models. The most popular bicycle types today are the hybrid or mountain bike. These relatively lightweight bicycles feature wider knobby tires that can handle both on-road and off-road conditions, from 10 to 27 gears, and upright handlebars. Advanced versions have features such as front and rear shocks to help steady the rider on rough terrain. The "10-speed" bicycles of years past have evolved into a sophisticated ultra-light "road bike" that is used primarily by the serious long distance adult bicyclists. These machines feature very narrow tires that are more susceptible to flats and blowouts from debris on the roadway.
- Who rides bicycles? While the majority of Americans (and Fremont residents) own bicycles, most of these people are recreational riders who ride relatively infrequently. School children between the ages of about 6 and 14 typically make up a large percentage of the bicycle riders today, often riding to school, parks, or other local destinations on a daily basis, weather permitting. The serious adult road bicyclist who may compete in races, "centuries" (100 mile tours) and/or ride for exercise makes up a small, but important, segment of bikeway users, along with serious off-road mountain bicyclists, who enjoy riding on trails and dirt roads. Other bicyclists include lower-income people for whom the bicycle is their only transportation option, and are riding by necessity to work or for shopping. The single biggest adult group of bicyclists is the intermittent recreational rider who generally prefers to ride on pathways or quiet side streets.

### 4.5.1. Recreational Bicyclist Needs

The term "recreational" cyclist covers a broad range of skill and fitness levels. Recreational cyclists in Fremont can range from a "roadie" who joins 50 mile group rides on weekends, to a family with young children who occasionally want to ride a couple miles down a quiet bike path, and all levels in between. A cyclist's level of skill, fitness, and comfort on the road will determine what type of facility they are looking for. The needs of recreational bicyclists must be understood prior to developing a system or set of improvements. While it is not possible to serve every neighborhood and every need, a good plan will integrate recreational needs to the extent possible. The following points summarize recreational needs:

- Recreational users cover all age groups from children to adults to senior citizens. Each group has its own abilities, interests, and needs.
- Directness of route is typically less important than routes with less traffic conflicts, visual interest, shade, and protection from wind, moderate gradients, or other features.
- People exercising or touring often (though not always) prefer a loop route rather than having to backtrack.

In order to characterize the differences in recreational cyclists, this study breaks this category into two subcategories: "Road Cyclists" and "Casual Cyclists," acknowledging that these are generalizations and that the average cyclist may have attributes of both user groups.

Road Cyclists

Road cyclists are those who will bike almost exclusively on street, because roadways are the type of facility that accommodates their desire for higher speeds, longer distances, and few conflicts with other recreational users. Typical trip distances for the road cyclist can range from 10 miles to over 50 miles. While the average road cyclist would likely prefer to ride on roads with little or no traffic, they are generally comfortable riding in traffic if necessary. To this end, a road cyclist will tend to ride in a manner similar to a motor vehicle (e.g. when approaching traffic signals or making left turns). Road cyclists are typically not seeking a recreational destination along the route, as the ride itself is the recreation. In fact, special cycling clothing and shoes and the lack of a bicycle lock, tends to limit the ability of the road cyclist to park and walk around off the bike.

Due to the relatively narrow width and thin casing of standard road bike tires, road cyclists are often susceptible to flat tires. As such, road cyclists are very concerned about glass, rocks, and other debris on the road or in the shoulder. In addition, loose material on the road such as sand or gravel can cause skinny road tires to lose traction and wash out on curves. Since most road debris tends to end up in the shoulder, road cyclists will tend to merge into the travel lane if any debris is present in the shoulder that might cause a flat tire or other hazard. This can sometimes lead to conflicts with motor vehicles, as many motorists don't understand why a cyclist is riding in the lane if there is a seemingly good shoulder available.

Although very dependent on the fitness level of the rider, topography is less of a limiting factor for road cyclists; in fact, many road cyclists seek out routes that involve challenging and scenic terrain, which is often hilly. In Fremont, these may include rides up Niles Canyon Road to Palomares Road, Morrision Canyon Road, or across the Dumbarton Bridge bike path to destinations in the Santa Cruz Mountains.

Many of Fremont's recreational road cyclists are members of the Fremont Freewheelers Bicycle Club, which sponsors a variety of recreational rides each month.

Casual Cyclists

Casual recreational cyclists are those who generally want to ride on off-street bike paths, are seeking a more relaxed cycling experience, and cover shorter trip distances at slower speeds. Casual cyclists will tend to do trips of less than 10 miles in length, and often ride more comfort-oriented bikes, hybrid or mountain bikes. Casual cyclists may ride as a family group, with children, and because they are more likely to ride with others of varying skill and fitness levels, flat topography is generally desired. Casual cyclists are typically not comfortable riding in traffic, and will avoid riding on busy streets when possible, riding on the sidewalk if necessary. Bike routes that extend through low-traffic residential streets are generally acceptable for casual cyclists, even if they are not the most direct route between destinations. Casual

cyclists may load their bikes in their cars and drive to a bike path, and are more likely in need of parking areas. Having recreational amenities and features along the route is more important to the casual cyclists, such as drinking fountains, shaded areas, picnic tables, interpretive signs, and scenic vistas. Recreational destinations are also important for casual cyclists, as they provide a place to stop and get off the bike and walk around. To this end, having secure bike parking at destinations is important.

Because of its relatively flat topography, Fremont offers many good opportunities for casual and family cyclists, and attractive recreational destinations including the Alameda Creek Trail and Coyote Hills Regional Park. Major barriers would include the major freeway crossings of I-680 and I-880, busy arterial roadways or highways, and major crossings or intersections that might intimidate casual cyclists who are not comfortable negotiating heavy traffic, merging, or lane changes, especially those who go on family rides with young children. Clearly signed bike routes that avoid busy streets and intersections are important to encourage casual cyclists.

### 4.5.2. Commuter Bicyclist Needs

As this plan for enhancing and developing bicycle facilities, and available state and federal bicycle funding is primarily focused on commuting cyclists – those riding to work or school, or for shopping, errands, and other utilitarian trips – it is important to understand the specific needs of bicycle commuters.

Commuter bicyclists in Fremont include employees who ride to work, children who ride to school, and people riding to destinations such as downtown businesses or neighborhood parks. Millions of dollars have been spent throughout the United States attempting to increase the number of people who ride to work or school, with moderate success. Bicycling requires shorter commutes, which runs counter to many of our nation's past land use and transportation policies, which effectively encouraged people to live further, and further from where they work. Access to transit helps extend the commute range of cyclists, but transit systems also face an increasingly dispersed live-work pattern that is difficult to serve. Despite these facts, Fremont has the potential to increase the number of people who ride to work or school because of (a) concentrated local employment, (b) a relatively flat topography, (c) a moderate climate, and (d) a high percentage of work commute trips (20%) that are less than 15 minutes in length.

For example, bicycle commuters in the City of Davis have reduced peak hour traffic volumes by over 15 percent -- to the point that many downtown streets that would normally be four lanes of traffic (with no bike lanes) have only two traffic lanes and ample room for bicyclists. While Davis may be an anomaly, national surveys have indicated that about 20 percent of the adult population would use a bicycle to ride to work at least occasionally if there were a properly designed bikeway system.

Commuter and student destinations in Fremont residents include major employers such as LAM Research Group, the numerous high-tech office and industrial parks located in the city, colleges such as Ohlone College, the Fremont BART station and Amtrak/ACE station, and elementary, junior high and high schools. Targeting bikeway improvements to commuters is important because most roadway

congestion and a significant portion of air contaminants occur during the AM and PM periods. Enhancing the safety and aesthetic attractiveness of Fremont bikeways will help to encourage even more residents to commute on bicycles.

Key commuter needs are summarized below.

- Commuter walking or bicycling typically falls into one of two categories: (1) adult employees, and (2) younger students.
- Adult employee commuters may be further broken down into "by choice" and "by necessity." "By Choice" commuters may own motor vehicles, but choose to bicycle to work for a variety of reasons such as avoiding traffic, health and exercise, or environmental reasons. "By Necessity" commuters are typically lower income residents who may not own a motor vehicle at all (or even have a drivers license), and use the bicycle as their primary transportation mode.
- Commuter trips range from several blocks to one or more miles.
- Commuters typically seek the most direct and fastest route available. Many experienced "By Choice" adult commuters are comfortable riding on-street, often preferring to ride on arterials rather than side streets. "By Necessity" commuters are often less experienced cyclists who are not aware of the rules of the road and are more likely to ride on the sidewalk or ride in the wrong direction on-street.
- Unprotected intersection (no traffic control device such as a signal or stop sign) crossing locations are major concerns of all bicycle commuters.
- Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with vehicles.
- Places to securely store bicycles are of paramount importance to all bicycle commuters.
- Major commuter concerns include changes in weather (e.g. rain), riding in darkness, personal safety and security.
- Many younger students use sidewalks for riding to schools or parks, which is acceptable in areas where pedestrian volumes are low and driveway visibility is high, and the cyclists speed is relatively low. Where on street parking and/or landscaping obscures visibility, sidewalk riders may be exposed to a higher incidence of accidents. Older students who consistently ride at speeds over 10 mph should be directed to riding on street wherever possible.
- Cyclists riding the wrong-way on-street appear to be fairly common in Fremont (based on field observations), and accounted for over 1/3 of the recorded accidents from 2000-2003, pointing to the need for education programs for both children and adults.

Commuters and students follow similar paths, which is typically the most direct possible route from origin to destination. For grammar school students, this may

consist of residential or collector streets, with few crossings of major arterials. For junior high and high school students, riders may have to cross up to five or six arterials to reach school. For college students and adult commuters, trips are most often under five miles but may be as long as 10 or 15 miles.

Unfortunately, commuters and students need to travel during periods of peak traffic activity, and to destinations that may have high levels of congestion and traffic volumes/speeds. For example, one of the most dangerous parts of a young student's commute is the drop-off zone in front of their school where dozens of vehicles jockey for position.

Once they have arrived at their destinations, bicycle commuters often find no (or poor) bicycle racks, and no showers or lockers. Rather than providing an incentive for bicyclists, most schools and employers inadvertently discourage bicyclists while continuing to subsidize parking for the automobile.

In terms of developing an overall bikeway network, improvements that benefit commuting bicyclists include bike lanes or wider curb lanes along arterials and collectors, loop detectors at signalized intersections, new signals where school children need to cross busy arterials, adequate maintenance of the pavement, and adequate bicycle storage and showers at their destinations. Beyond the network development and "Engineering" aspects of the plan, commuter bicyclists can benefit greatly from the other 3 E's: Educational programs that emphasize bicycling street skills and safe traffic behavior (for both bicyclists and motorists), Enforcement of both motorist and bicyclist traffic violations, and Encouragement efforts and campaigns such as Bike to Work day or employer-based bike commute incentives.

Most commute bicycle trips are under five miles, except for those commuters linking to another mode such as bus transit, BART, Amtrak, or ACE. Allowing bicycles on other modes such as rail or bus, or providing bicycle lockers at multi-modal stations help extend the range of the bicycle commuter. Other bicycle commuters will depend on a well-devised local bikeway network produced by a city in its bicycle plan.

## 4.6. PUBLIC OUTREACH

Public outreach is an important component of the Fremont Bicycle Master Plan process. The public outreach process for this project included variety of mechanisms to obtain public input, including an Advisory Committee, a survey, and a series of public workshops.

### 4.6.1. Advisory Committee

An Advisory Committee comprised of City of Fremont Staff, key BPTAC members, and project consultants was convened to discuss key plan elements and review interim work products. Advisory Committee meetings were held on an as-needed basis over the course of the Bicycle Master Plan process.

### 4.6.2. Survey

A survey form was prepared in order to gather information from Fremont residents on current bicycling behavior, any problem areas they have identified, and any improvements in the bikeway system they would like to see. The survey was distributed at the first public meeting, was posted to the City's Bicycle and Pedestrian Program webpage, and notice of its availability was made to local cycling groups including the Fremont Freewheelers and the East Bay Bicycle Coalition. Survey responses were taken during the months of October and November 2004. A copy of the survey form and summary of the responses received are included in Appendix B of this plan.

### 4.6.3. Public Workshops

The Bicycle Master Plan process included a series of public workshops to receive community input. The first public workshop was held on October 20, 2004. This meeting was intended to introduce residents to the Master Plan process and schedule, and to gather input on existing bicycling conditions in Fremont. The second public workshop was held on April 13, 2005, and focused on a presentation of the Draft Bicycle Master Plan and recommended Bikeway network. Additional opportunities for public comment will be available following release of the Draft Final Bicycle Master Plan when the Plan is considered by the Bicycle Advisory Commission, Planning Commission and finally by the City Council for adoption. Meeting notices and summaries from the workshops are provided in Appendix C to this plan.